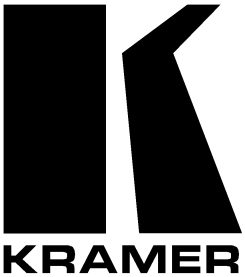
Kramer Electronics, Ltd.



USER MANUAL

Model:

123Vxl

Differential Video Line Amplifier

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1 Introduction

Dedication by Kramer Electronics since 1981, to the development and manufacture of high quality video/audio equipment, makes the Kramer line an integral part of the finest production and presentation facilities in the world. In recent years, Kramer has redesigned and upgraded most of the line, making the best even better! The Kramer line of professional video/audio electronics is one of the most versatile and complete available, and is a true leader in terms of quality, workmanship, price/performance ratio and innovation. In addition to our high quality Kramer TOOLS **123Vxl** *Differential Video Line Amplifier*, we also offer excellent single-ended distribution amplifiers, switchers and matrices, presentation processors, interfaces, remote controllers and computer-related products. Congratulations on purchasing your Kramer **123Vxl** *Differential Video Line Amplifier*. This product is ideal for:

- Professional display systems that require long distance delivery of high quality video
- CCTV, medical, and sports applications
- Retail stores, delivering an identical picture to up to 3 distant monitors

The package includes the following items:

- **123Vxl** *Differential Video Line Amplifier*
- Power adapter (12V DC Input)[1]
- This user manual[2]
- Kramer concise product catalog/CD

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high performance high resolution cables[3]

1 As an option, you can purchase the Kramer VA-50P 6 Port Universal 12-Volt Power Supply, enabling you to supply power to up to 6 Kramer devices that require 12VDC

2 Download up-to-date Kramer user manuals from the Internet at this URL: http://www.kramerelectronics.com/manuals.html

3 The complete list of Kramer cables is on our Web site at http://www.kramerelectronics.com (click "Cables and Connectors" in the Products section)

3 Overview

The high performance **123Vxl** *Differential Video Line Amplifier* splits an input source to 3 identical outputs. In particular, the **123Vxl**:

- Uses special differential amplifying circuitry that eliminates common mode noise and hum problems commonly found in long video lines, almost completely isolating the input from the outputs
- Comes with an extra wide bandwidth of 425 MHz
- Includes recessed gain and equalization trimmer controls to compensate for signal losses inherent in long cable runs

Achieving the best performance means:

- Connecting only good quality connection cables, thus avoiding interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Avoiding interference from neighboring electrical appliances that may adversely influence signal quality
- Positioning your **123Vxl** *Differential Video Line Amplifier* in a location free from moisture and away from excessive sunlight and dust

4 Your Differential Video Line Amplifier

Figure 1 and Table 1 define the **123Vxl** *Differential Video Line Amplifier*:

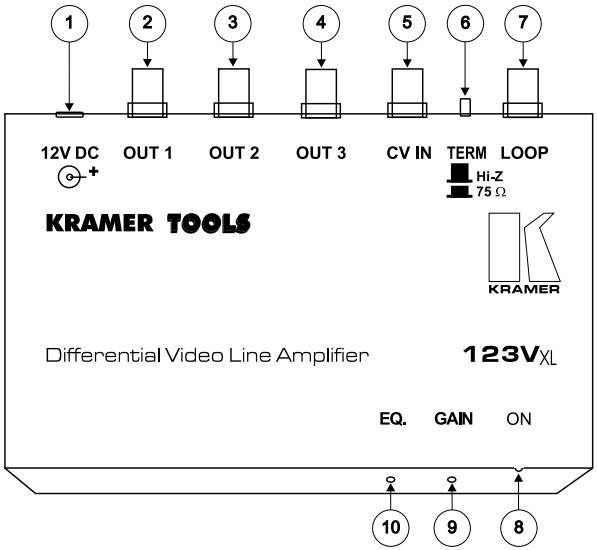

Figure 1: 123Vxl Differential Video Line Amplifier

Table 1: 123Vxl Differential Video Line Amplifier Features

#	Feature	Function
1	*12V DC*	+12V DC connector for powering the unit
2	*OUT 1* BNC Connector	Connects to a video acceptor
3	*OUT 2* BNC Connector	Connects to a video acceptor
4	*OUT 3* BNC Connector	Connects to a video acceptor
5	*CV IN* BNC Connector	Connects to the video source
6	*TERM Hi-Z / 75*Ω Switch	Pushing in selects *75*Ω, releasing selects *Hi-Z*[1]
7	*LOOP* BNC Connector	For looping to increase output availability[2]
8	*ON LED*	Illuminates when receiving power
9	*GAIN* Trimmer	Adjusts[3] the output signal level for outputs 1, 2 and 3
10	*EQ.* Trimmer	Adjusts[3] the cable compensation equalization level

5 Connecting Differential Video Line Amplifier Units

You can connect up to five **123Vxl** *Differential Video Line Amplifier* units, to provide up to 15 outputs, as Figure 2 illustrates.

To connect up to five **123Vxl** *Differential Video Line Amplifier* units:

1. Connect the video source to the *CV IN* BNC connector on the first unit.
2. Connect the *LOOP* BNC connector on each unit to the *CV IN* BNC connector on the next unit in the line, respectively[4].
3. Connect the *OUT 1*, *OUT 2* and *OUT 3* BNC connectors on each unit to the appropriate video acceptors[5], as required.
4. Release the TERM switch (selecting Hi-Z) on all units, except on the last (fifth) unit. Push in the TERM switch on the last (fifth) unit (selecting 75Ω).

1 For looping select Hi-Z

2 Connects to the CV IN connector on the next unit

3 Insert a screwdriver into the hole and carefully rotate it, to trim the level

4 Connect the LOOP BNC connector on the first unit to the CV IN BNC connector on the second unit. Connect the LOOP BNC connector on the second unit to the CV IN BNC connector on the third unit. Connect the LOOP BNC connector on the third unit to the CV IN BNC connector on the fourth unit. Connect the LOOP BNC connector on the fourth unit to the CV IN BNC connector on the fifth unit. Leave the LOOP BNC connector on the fifth (last) unit unconnected

5 Connect the OUT 1, OUT 2 and OUT 3 BNC connectors on the first unit to the video acceptors 1, 2 and 3, respectively. Connect the OUT 1, OUT 2 and OUT 3 BNC connectors on the second unit to the video acceptors 4, 5 and 6, respectively. Connect the OUT 1, OUT 2 and OUT 3 BNC connectors on the third unit to the video acceptors 7, 8 and 9, respectively. Connect the OUT 1, OUT 2 and OUT 3 BNC connectors on the fourth unit to the video acceptors 10, 11 and 12, respectively. Connect the OUT 1, OUT 2 and OUT 3 BNC connectors on the fifth unit to the video acceptors 13, 14 and 15, respectively

5. Adjust the output signal level and/or cable compensation equalization level on each unit, if required.

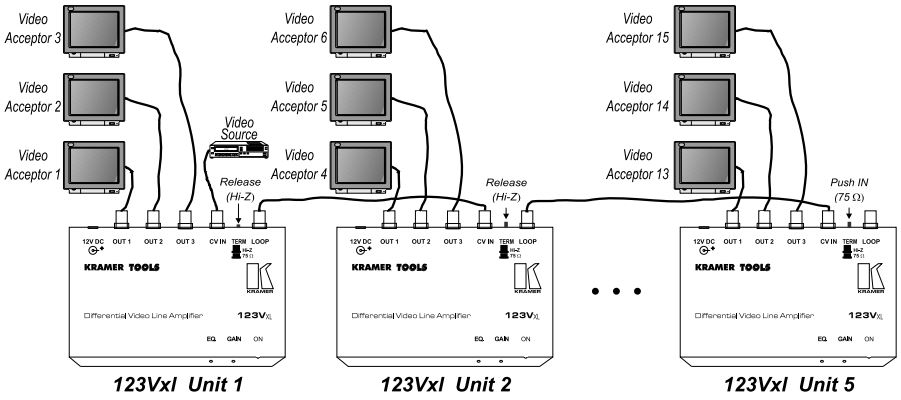

Figure 2: Connecting 123Vxl Differential Video Line Amplifier Units

6 Technical Specifications

Table 2: Technical Specifications[1] *of the 123Vxl Differential Video Line Amplifier*

Input:	1 video (CV IN), differential, 1Vpp / 75Ω, on a BNC type connector 1 video (LOOP), differential, 1Vpp / 75Ω, on a BNC type connector
Outputs:	3 video, 1Vpp / 75Ω on BNC type connectors
Video Bandwidth:	425 MHz -3dB
Coupling:	AC
Diff. Gain:	1.33%
Diff. Phase:	0.1 Deg
S/N Ratio:	62.6dB
K-Factor:	<0.05%
Max. Video Output:	2 Vpp
Power Source:	12 VDC, 80mA
Dimensions:	12cm x 7.5cm x 2.5cm (4.7" x 2.95" x 0.98"), W, D, H.
Weight:	0.3 kg (approx.), (0.66 lbs.)
Accessories:	Power supply, mounting bracket
Options:	19" rack adapters RK-T1, RK-T3

1 Specifications are subject to change without notice

LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

HOW LONG IS THE WARRANTY

Labor and parts are warranted for three years from the date of the first customer purchase.

WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the web site www.kramerelectronics.com.
2. Any product, on which the serial number has been defaced, modified or removed.
3. Damage, deterioration or malfunction resulting from:
   - i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
   - ii) Product modification, or failure to follow instructions supplied with the product
   - iii) Repair or attempted repair by anyone not authorized by Kramer
   - iv) Any shipment of the product (claims must be presented to the carrier)
   - v) Removal or installation of the product
   - vi) Any other cause, which does not relate to a product defect
   - vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on you product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.
NOTE: All products returned to Kramer for service must have prior approval. This may be obtained from your dealer.
This equipment has been tested to determine compliance with the requirements of:

EN-50081:	"Electromagnetic compatibility (EMC); generic emission standard. Part 1: Residential, commercial and light industry"
EN-50082:	"Electromagnetic compatibility (EMC) generic immunity standard. Part 1: Residential, commercial and light industry environment".
CFR-47:	FCC Rules and Regulations: Part 15: "Radio frequency devices Subpart B – Unintentional radiators"

CAUTION!

- Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.
- Use the supplied DC power supply to feed power to the machine.
- Please use recommended interconnection cables to connect the machine to other components.

For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com. Updates to this user manual may be found at http://www.kramerelectronics.com/manuals.html. We welcome your questions, comments and feedback.

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